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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/764,130

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Mohan R. Duggi

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BRANDT, CHRISTOPHER M

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/764,130

Applicant(s)

DUGGI ET AL.

Examiner

Christopher M. Brandt

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This Action is in response to applicant's amendment / arguments filed on September 4, 2007. **Claims 1-20** are still pending in the present application. **This Action is made FINAL.**

Response to Arguments

Applicant's arguments filed September 4, 2007 have been fully considered but they are not persuasive.

The argued features, i.e., a wireless ad hoc network that includes a first wireless node that has the ability of routing data packets, wherein the first wireless node comprises: a wireless transceiver that has the ability to wireless communicate with other wireless nodes; and a controller that has the ability of receiving incoming packets from said wireless transceiver and transmitting outgoing data packets to said wireless transceiver, wherein said controller also has the ability of receiving a first data packet associated with at least one of: the incoming data packet and the outgoing data packet, determining a first medium access control (MAC) layer address associated with said first data packet, and adding said first MAC layer address to said first data packet, reads upon Nelson in view of Lipasti as follows.

Nelson is discussing a router (i.e. first node) that transmits and receives packets. Therefore, Nelson discloses the limitation, "a radio frequency (RF) transceiver capable of communicating with other ones of said plurality of devices". In addition, when an incoming packet, destined for a network device on a specific subnet, arrives at a router (i.e. receiving an incoming packet by the controller), the router searches the ARP cache to find a MAC address that matches the IP address. If the router finds a corresponding MAC address, then the packet

can be converted to include the new MAC address. Therefore, Nelson teaches the limitation, "a controller capable of receiving incoming data packets from said RF transceiver and sending outgoing data packets to said RF transceiver, wherein said controller is further capable of receiving a first data packet associated with at least one of: the incoming data packet and the outgoing data packet, determining a first medium access control (MAC) layer address associated with said first data packet, and adding said first MAC layer address to said first data packet".

Nelson showed that incoming packet can be converted to include the new MAC address in a subnet destined for a network device. However, Nelson failed to disclose that this subnet was a mobile ad hoc network and was modified by Lipasti to show that it would have been obvious to one of ordinary skill in the art to modify Nelson and have a mobile ad hoc network such as a network according to the IEEE 802.11 WLAN (Wireless Local Area Network).

With regards to the applicant's argument that Nelson fails to teach or disclose at least, for example: (1) a first MANET node capable of routing data packets; (2) a first MANET node comprising a radio frequency (RF) transceiver capable of wirelessly communicating with other ones of said plurality of MANET nodes; and (3) a controller capable of receiving incoming data packets from said RF transceiver and sending outgoing data packets to said RF transceiver, as required by Claim 1, the examiner respectfully disagrees. First, the applicants argue that because Nelson does not disclose wireless communications, then Nelson does not disclose the claimed invention. However, Nelson substantially discloses the claimed invention but fails to disclose that the communications is wireless. Nelson discloses a system for determining a MAC layer address of a network interface on a remote device. In addition, the system identifies an internetworking device, such as a router, that is attached (wired) to the remote subnet to which

the network interface of the remote device is attached (wired) (column 3 lines 11-17). Therefore, with the exception of wireless communications, Nelson discloses the claimed invention. The examiner could have taken Official Notice since there are a number of motivations available to one of ordinary skill in the art to make a system wireless. Nonetheless, the examiner relied upon Lipasti to show that one of ordinary skill in the art would be inclined to use wireless systems. Therefore, Nelson in view of Lipasti disclose (1) a first MANET node capable of routing data packets (Nelson discloses that the router transmits the received packet (column 10 line 20). Lipasti discloses a the routing of packets in a mobile ad hoc network comprising a plurality of wireless mobile nodes, where the mobile nodes maintain and acquire routing information on other mobile nodes and route packets to other mobile nodes on the basis of the mobile node specific paths (abstract)), (2) a first MANET node comprising a radio frequency (RF) transceiver capable of wireless communicating with other ones of said plurality of MANET nodes (Nelson discloses that when an incoming packet, destined for a network device on a specific subnet arrives at a router....ARP software broadcasts a request packet in a special format to all network devices (column 10 lines 4-12). Lipasti; abstract), and (3) a controller capable of receiving incoming data packets from said RF transceiver and sending outgoing data packets to said RF transceiver (Nelson discloses an incoming packet arriving at a router (i.e. receiving), the router searches the ARP cache to find a MAC address. If the router finds a corresponding MAC address, then the packet can be converted to include the new MAC address. The router next transmits the received packet, converted so that it includes the MAC address of the responding network device as a destination MAC address (column 10 lines 4-28). Lipasti; abstract).

With regards to applicant's argument that there is no connection with the teachings of the Nelson reference and the Lipasti reference, the examiner respectfully disagrees. Nelson discloses a system and method for determining a MAC layer address of a network interface on a remote device, which operates using an **IP address** associated with the same network interface of the remote device (column 3 lines 11-21). Lipasti's invention relates to a method and equipment for arranging addressing and routing in mobile ad hoc networks, more precisely in mobile ad hoc networks supporting the **IP (Internet Protocol)** (emphasis added). At the very least, both Nelson and Lipasti discuss routing methods and systems supporting the **IP (Internet Protocol)**. In addition, Lipasti explicitly states that recent advancements in computer and wireless communications technologies, mobile wireless computing is expected to experience increasingly widespread use and applications, much of which will involve the use of the IP layer. Therefore, Lipasti does not merely suggest the use of mobile ad hoc networks but rather relies upon mobile ad hoc networks (paragraph 7).

With regards to applicant's argument regarding that Nelson and Lipasti fail to teach or disclose, a controller that is further capable of receiving a first data packet associated with at least one of: the incoming data packet and the outgoing data packet, determining a first medium access control (MAC) layer address associated with said first data packet, and adding said first MAC layer address to said first data packet, the examiner respectfully disagrees. First, as stated above, Nelson in view of Lipasti disclose an incoming packet arriving at a router (i.e. receiving). The router next transmits the received packet (column 10 lines 4-28). In addition, Lipasti discloses that mobile nodes maintain and acquire routing information on other mobile nodes on the basis of the mobile node specific paths (abstract). Therefore, Nelson and Lipasti disclose "a

controller that is further capable of receiving a first data packet associated with at least one of: the incoming data packet and the outgoing data packet". Since the claim includes the clause, "associated with at least one of:", the examiner is not required to reject the remaining portion (i.e. determining a first medium access control (MAC) layer address associated with said first data packet, and adding said first MAC layer address to said first data packet) of the claim because the claim is written such that it only calls for one of the three elements. Nonetheless, the examiner notes that Nelson and Lipasti disclose that if the router finds (i.e. determines) a corresponding MAC address, then the packet can be converted to include the new MAC address (column 10 lines 10-12). It is noted that Nelson and Lipasti disclose finding a corresponding MAC address, which is equivalent to "determining". In addition, Nelson and Lipasti disclose that that the packet (i.e. incoming) can be converted to include the new MAC address, which is equivalent to "adding said first MAC layer address", since Nelson is including the new MAC address. Therefore, Nelson and Lipasti disclose "determining a first medium access control (MAC) layer address associated with said first data packet, and adding said first MAC layer address to said first data packet".

With regards to applicant's argument that there is no motivation or suggestion within the Nelson reference or the Lipasti reference to prompt one of ordinary skill to combine the two teachings, the examiner respectfully disagrees. First, it is not sufficient to simply state that there is no motivation and then not provide any reasoning. Second, the examiner relied upon Lipasti to simply show that with the recent advancements in computer and wireless communications technologies, mobile wireless computing is expected to experience increasingly widespread use

and applications (paragraph 2). Third, both Nelson and Lipasti teach routing methods and systems supporting the IP (Internet Protocol).

As a result, the argued features are written such that they read upon the cited references.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-20 are rejected under 35 USC 103(a) as being unpatentable over **Nelson (US Patent 6,292,838 B1)** in view of **Lipasti (US PG PUB 2002/0039357 A1)**.

Consider **claim 1**. Nelson discloses the invention for use in a communication network formed by a plurality of devices, a first device capable of routing data packets, said first device comprising:

a radio frequency (RF) transceiver capable of communicating with other ones of said plurality of devices (column 10 lines 4-28, read as the router transmits the received packet); and

a controller capable of receiving incoming data packets from said RF transceiver and sending outgoing data packets to said RF transceiver, wherein said controller is further capable of receiving a first data packet associated with at least one of: the incoming data packet and the outgoing data packet, determining a first medium access control (MAC) layer address associated with said first data packet, and adding said first MAC layer address to said first data packet (column 10 lines 4-28, read as when an incoming packet, destined for a network device on a specific subnet, arrives at a router, the router searches the ARP cache to find a MAC address. If the router finds a corresponding MAC address, then the packet can be converted to include the new MAC address).

Nelson discloses the claimed invention except he fails to teach a mobile ad hoc network (MANET) and that the communication is wireless.

However, Lipasti discloses a mobile ad hoc network (MANET) and that the communication is wireless (paragraph 22, read as the invention can be used in any kind of

mobile ad hoc network such as a network according to the IEEE 802.11 WLAN (Wireless Local Area Network).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Lipasti into the invention of Nelson in order to implement this network in a Bluetooth network or a Wireless Local Area Network (paragraph 22).

Consider **claim 11**. Nelson discloses the invention for use in a communication network formed by a plurality of devices, a method of routing data packets in a first device comprising the steps of:

receiving a first data packet associated with at least one of: an incoming data packet and an outgoing data packet (column 10 lines 4-28, read as an incoming packet, destined for a network device on a specific subnet arrives at a router);

determining a first medium access control (MAC) layer address associated with the first data packet (column 10 lines 4-28, the router searches the ARP cache to find a MAC address when an incoming packet arrives); and

adding the first MAC layer address to the first data packet (column 10 lines 4-28, read as if the router finds a corresponding MAC address, then the packet can be converted to include the new MAC address).

Nelson discloses the claimed invention except he fails to teach a mobile ad hoc network (MANET).

However, Lipasti discloses a mobile ad hoc network (MANET) (paragraph 22, read as the invention can be used in any kind of mobile ad hoc network such as a network according to the IEEE 802.11 WLAN (Wireless Local Area Network).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Lipasti into the invention of Nelson in order to implement this network in a Bluetooth network or a Wireless Local Area Network (paragraph 22).

Consider **claim 2 (and claim 12) and as applied to claim 1**. Nelson and Lipasti disclose wherein said controller determines said first MAC layer address associated with said first data packet by determining a first destination MANET node associated with said first data packet (Nelson; column 10 lines 4-28).

Consider **claim 3 (and claim 13) and as applied to claim 2**. Nelson and Lipasti disclose wherein said controller further determines said first MAC layer address associated with said first data packet by determining a first route coupling said first MANET node and said first destination MANET node (column 9 line 35 – column 10 line 3, Lipasti; paragraph 8, 26, 27).

Consider **claim 4 (and claim 14) and as applied to claim 3**. Nelson and Lipasti disclose wherein said controller determines said first route by looking up said first route in a routing table associated with said first MANET node (Nelson; column 12 lines 14-32, Lipasti; paragraphs 84, 87, 99).

Consider **claim 5 (and claim 15) and as applied to claim 4**. Nelson and Lipasti disclose wherein said controller looks up said first route using an IP address associated with said first data packet (column 12 lines 14-32).

Consider **claim 6 and 7 (and claims 16 ad 17) and as applied to claim 3**. Nelson and Lipasti disclose wherein said controller forwards said first data packet containing said first MAC layer address to said first destination MANET node by transmitting said first data packet to a next sequential MANET node in said first route and wherein said first MAC layer address is associated with said next sequential MANET node in said first route (Nelson; column 3 lines 49-57, column 10 lines 4-28, Lipasti; paragraph 26).

Consider **claim 8 (and claim 18)and as applied to claim 6**. Nelson and Lipasti disclose wherein said controller is further capable of receiving a second data packet from a medium access control (MAC) layer associated with said first MANET node and determining if said second data packet contains a MAC layer address associated with said first MANET node (Nelson; column 10 lines 4-28, Lipasti; paragraph 27).

Consider **claim 9 (and claim 19) and as applied to claim 8**. Nelson and Lipasti disclose wherein said controller, in response to a determination that said second data packet does contain a MAC layer address associated with said first MANET node, routes said second data packet to a second destination MANET node (Nelson; column 10 lines 4-28, Lipasti; paragraph 27).

Consider **claim 10 (and claim 20) and as applied to claim 9**. Nelson and Lipasti disclose wherein said controller, in response to a determination that said second data packet does not contain a MAC layer address associated with said first MANET node, stores Internet

protocol (IP) information associated with said second data packet in a routing table associated with said first MANET node (Nelson; column 12 lines 14-32, Lipasti; paragraphs 84, 87, 99).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

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Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Brandt whose telephone number is (571) 270-1098.

The examiner can normally be reached on 7:30a.m. to 5p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro can be reached on (571) 272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.



Christopher M. Brandt

C.M.B./cmb



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